

**Notice of Allowability**

Application No.

10/607,230

Applicant(s)

HAIR ET AL.

Examiner

Art Unit

Toan N Pham

2632

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☐ This communication is responsive to \_\_\_\_\_.
2. ☐ The allowed claim(s) is/are 1-43.
3. ☒ The drawings filed on 26 June 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All   b) ☐ Some\*   c) ☐ None   of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.  
**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
  6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
    - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
      - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
    - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),  
Paper No./Mail Date 07/29/03
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☒ Interview Summary (PTO-413),  
Paper No./Mail Date 02/02/05
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

***Examiner's Amendment***

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Richard Wulff on February 1, 2005.

**Examiner's Amendment:**

Delete or cancel claims 44 and 45.

***Allowable Subject Matter***

Claims 1-43 are allowed.

The following is an examiner's statement of reasons for allowance: The present invention is directed to a system for transmitting power and data using a single set of wires. Each independent claim identifies the uniquely distinct features:

Regarding claim 1: "a bi-directional data and power transmission system comprising a controller electrically connected to the power source and to the plurality of wires, the controller comprising a current sensor, a controller microprocessor, and a current receiver circuit, a node electrically connected to the current receiver through the plurality of wires, the node comprising an active current sink, a node microprocessor, and a load; and wherein the power source supplies a DC voltage".

Regarding claim 11: "a bi-directional data and power transmission system comprising a current receiver circuit comprising an amplifier, an integrator, and a comparator, the current receiver circuit adapted to receive an input signal from the current sensor and to supply an output signal to the controller microprocessor; and a driver comprising a transistor bridge for switching the polarity of the DC voltage on the plurality of wires in response to voltage control signals from the controller microprocessor".

Regarding claim 16: "a bi-directional data and power transmission system comprising a power conditioning circuit comprising a full-wave rectifier and a passive filter for receiving power in from the plurality of wires and supplying power out to the load; a data conditioning circuit comprising a detector for receiving data in from the controller on the plurality of wires and supplying data out to the microprocessor; and an active current sink controlled by at least one digital output from the node microprocessor".

Regarding claim 20: "a bi-directional data and power transmission system comprising a controller electrically connected to the power source and to the plurality of wires, the controller comprising a current sensor, a controller microprocessor, a current receiver circuit, and a driver comprising a transistor bridge capable of switching the polarity of the DC voltage on the plurality of wires in response to voltage control signals from the controller processor; and a node electrically connected to the controller through the plurality of wires, the node comprising an active current sink, a node processor, and a load".

Regarding claim 29: "a bi-directional data and power transmission system comprising a current receiver circuit comprising an amplifier, an integrator, and a comparator; the current receiver circuit adapted to receive an input signal from the current sensor and to supply an output signal to the microprocessor; and a driver comprising a transistor bridge for switching the polarity of the DC voltage on the plurality of wires in response to voltage control signals from the controller microprocessor, the voltage control signals being conditioned for supply to the transistor bridge by at least one switch, at least one buffer, and at least one bridge driver".

Regarding claim 33: "a bi-directional data and power transmission system comprising a means for receiving a current signal and supplying the current signal to a controller microprocessor, the means for receiving a current signal being electrically connected to the means for supplying a DC voltage; and a means for detecting a change in DC voltage polarity and for receiving power from the DC voltage, the means for detecting being electrically connected to the means for receiving and the means for supplying".

Regarding claim 38: "a bi-directional data and power transmission system comprising the steps of switching the polarity of the DC voltage in accordance with a control signal to the node; and actively sinking current at the node in order to send a response signal".

The prior art cited herein fail to anticipate the above limitations obvious.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

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accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The prior art of Fendt et al. (US 6,477,457), Wallace et al. (US 6,188,314) are cited to show additional data and power transmission systems.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan N Pham whose telephone number is (571) 272-2967. The examiner can normally be reached on M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel J Wu can be reached on (571) 272-2964. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

February 1, 2005

TOAN N. PHAM  
PRIMARY EXAMINER

